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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,681	08/29/2003	Yuichiro Nagashima	16869S-093400US	9208
20350	7590	06/27/2006	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			DARE, RYAN A	
			ART UNIT	PAPER NUMBER
			2186	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/651,681	Applicant(s) NAGASHIMA ET AL.	
	Examiner Ryan Dare	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 8-10, filed 5/15/06, with respect to the rejection(s) of claim(s) 1-8 and 10 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Popp et al., US PG Pub 2003/0177323, hereafter "Popp".

Claim Objections

2. Claim 1 is objected to because of the following informalities: Line 8 contains the word "and". Since there is more than one limitation following line 8, the examiner believes this "and" was inserted in error and should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Popp.

5. With respect to claim 1, Popp teaches a control method for a storage system which comprises a plurality of information processing units, a storage device provided with a plurality of logical volumes, and a user interface, said control method comprising:

performing a first process in which when a data write request to a first logical volume is sent from the information processing unit to the storage device the storage device stores data in the first logical volume and also stores data in a second logical volume, in par. 5;

performing a second process in which the storage device suspends the first process, in par. 6;

shifting from the second process to the first process to perform the first process, in par. 40;

when shifting from the second process to the first process to perform the first process, inquiring an information processing unit which can access the second logical volume of whether said information processing unit mounts the second logical volume or not, in pars. 38-40;

deciding whether said information processing unit mounts the second logical volume or not, in pars. 39-40; and

when the information processing unit mounts the second logical volume, outputting that effect from said user interface before shifting to the first process, in par. 29.

In this preferred embodiment of Popp, the storage device is monitored to make sure that a volume pair is connected. In this embodiment, deciding whether to mount the second

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logical volume occurs based on whether a flag is set which indicates to the information processing unit that a volume pair should be resynced if the mirror operation is currently suspended.

6. With respect to claim 2, Applicant claims a similar control method to claim 1, except that it is in the case that control is to be newly initiated between the first and second logical volume. The Popp reference acts in this same manner in this case as well. See par. 28, which describes the newly initiated control procedure.

7. With respect to claim 3, Applicant claims a similar control method to claim 1, except that the user interface is incorporated into a managing computer. As you can see in fig. 3 of Popp, the mirroring software is the source of the notifications. This mirroring software is running on a managing computer.

8. With respect to claim 4, Popp teaches a storage system control method according to claim 1, wherein the information processing unit does not mount the second logical volume the storage device shifts from the second process to the first process to perform the first process, in pars. 39-40. In this embodiment, if the pair resynchronization flag is not set, then the first process does not occur.

9. With respect to claim 5, Applicant claims a similar control method to claim 1, except that the first volume and second volume are on separate storage sites. It is apparent that Popp also teaches this. For example in par. 5, Popp mentions that the second volume is a remote volume.

10. Claim 6 is rejected for similar reasons as claim 4.

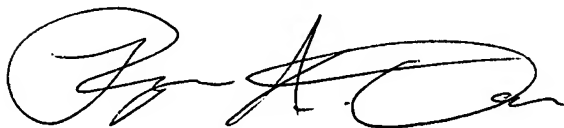
11. With respect to claim 7, Applicant claims a storage system that contains the means to perform the method of claim 1, and is therefore rejected using similar logic.
12. With respect to claim 8, Applicant claims a managing computer containing means to perform the method of claim 1, and is therefore rejected using similar logic.
13. With respect to claim 10, Applicant claims a computer-readable storage medium having a program to perform the method of claim 1, and is therefore rejected using similar logic.

Conclusion


1. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach similar control methods for storage systems in which data is mirrored.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Dare whose telephone number is (571)272-4069. The examiner can normally be reached on Mon-Fri 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (571)272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ryan Dare
June 20, 2006



MATTHEW KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2186